



SONY®

TRANSISTORS

abbreviated
specifications
and
outlines

SONY CORPORATION OF AMERICA

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ABBREVIATIONS USED IN THIS BOOKLET

AF	audio-frequency amplifier
B	base
C	collector
Conv	converter
D	drain
E	emitter
G	gate
Ge	germanium
gmo	transconductance
hfe	small-signal DC beta
I _c	maximum DC collector current
IF	intermediate-frequency amplifier
IF AGC	AGC-controlled IF amplifier
LN	low-noise
Mix	mixer
Osc	oscillator
PA	power amplifier
P _c	collector dissipation
RF	radio-frequency amplifier
RPA	radio-frequency power amplifier
S	source
Si	silicon
Sw	switch
T _c	case temperature
V _{cbo}	collector-to-base breakdown voltage, emitter open
V _{ceo}	collector-to-emitter breakdown voltage, base open
V _{dgo}	drain-gate breakdown voltage
V _{ds}	drain-source voltage
V _{ebo}	emitter-base breakdown voltage, collector open
V _{gso}	gate-source breakdown voltage
VHF	very-high frequency

MAXIMUM RATINGS								
Number	Type	Outline	V _{cbo} (V)	V _{ebo} (V)	I _c (mA)	P _c (mW)	Hfe I _c (mA)	Application
2SA182	Ge, pnp	12	-15	-15	-10	50		Sync separator, IF
2SA201E	Ge, pnp	12	-15	-5	-15	100		IF, Conv
2SA202	Ge, pnp	12	-15	-5	-15	100		IF, Conv
2SA234	Ge, pnp	13	-20	-0.5	-10	80		IF
2SA235	Ge, pnp	13	-20	-0.5	-10	80		RF, Conv
2SA281	Ge, pnp	72	-50		-30	120		RF, Conv, Mix, Osc, PA
2SA323	Ge, pnp	12	-20	-1.5	-15	70		Conv
2SA453	Ge, pnp	52	-22		-10	60	6(-1)	RF, Conv, Mix, Osc
2SA454	Ge, pnp	52	-22		-10	60	12(-1)	RF, Conv, Mix, Osc
2SA455	Ge, pnp	52	-22		-10	60	24(-1)	RF, Conv, Mix, Osc
2SA456	Ge, pnp	52	-22		-10	60	48(-1)	RF, Conv, Mix, Osc
2SA480	Si, pnp	60	-30	-5	-100	150	60(-3)	RF
2SA525	Ge, pnp	48	-20		-5	75		RF, Conv, Mix, Osc
2SA527	Si, pnp	97	-50	-5	-2A	5W*	50(-200)	PA

NOTE:
Collector current at which beta is measured is specified in parenthesis (). Units are mA unless otherwise specified.

* Measured at T_c = 25°C. All the transistors so marked require a heat sink to achieve the 25°C case temperature when operated at their maximum dissipation.

** V_{ceo} (V)

Number	Type	Outline	Vcbo(V)	Vebo(V)	Ic(mA)	Pc(mW)	Hfe Ic(mA)	Application
2SA546	Si, pnp	84	-70	-5	-1A	750	80(-100)	PA
2SA546A	Si, pnp	84	-90	-5	-1A	750	80(-100)	PA
2SA564	Si, pnp	42	-25	-5	-100	150	150(-2)	RF, AF
2SA564A	Si, pnp	42	-45	-5	-100	150	150(-2)	RF, AF
2SA610	Si, pnp	27, 29	-30	-5	-100	150	40-500(-1)	RF, AF
2SA611	Si, pnp	27, 29	60	-5	-100	150	40-500(-1)	RF, AF
2SA621-1	Si, pnp	84	-60		-200	600	60-500(50)	RPA
2SA621-2	Si, pnp	84	-70		-200	600	60-500(50)	RPA
2SA621-3	Si, pnp	84	-80		-200	600	60-500(50)	RPA
2SA677	Si, pnp	38	-25	-5	-200	250	65-690(-1)	RF, IF, Osc
2SA678	Si, pnp	38	-50	-5	-200	250	65-690(-1)	RF, IF, Osc
2SA704	Si, pnp	38	-25	-5	-200	250	65-690(-1)	LN, RF, IF, Osc
2SA705	Si, pnp	38	-50	-5	-200	250	65-690(-1)	LN, RF, IF, Osc
2SA706	Si, pnp	#3	-60	-6	-1A	950	150(100)	LN, PA, Sw
2SB136	Ge, pnp	12	-25	-12	-150	150	55-250(-50)	PA
2SB367	Ge, pnp	100	-25	-12	-1A	6.6W*	90(-0.5A)	PA
2SB378	Ge, pnp	84	-18		-150	180	25-70(-20)	PA, AF
2SB379	Ge, pnp	84	-18		-150	180	84(-20)	PA, AF

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Number	Type	Outline	Vcbo(V)	Vebo(V)	Ic(mA)	Pc(mW)	Hfe Ic(mA)	Application
2SB379A	Ge, pnp	84	-23		-300	270	84(-20)	PA, AF
2SB379B	Ge, pnp	84	-23		-500	270	84(-20)	PA, AF
2SB380	Ge, pnp	84	-18		-150	180	169(-20)	PA, AF
2SB380A	Ge, pnp	84	-23		-300	270	169(-20)	PA, AF
2SB381	Ge, pnp	84	-32		-300	270	42(-20)	PA, AF
2SB382	Ge, pnp	84	-32		-300	270	50-140(-20)	PA, AF
2SB383	Ge, pnp	84	-32		-500	270	84(-20)	PA
2SB474	Ge, pnp	100	-35	-6	-2A	12W*	100(-200)	PA
2SB481	Ge, pnp	100	-32	-10	-1A	6W*	50(-1A)	PA
2SB492	Ge, pnp	84	-25	-6	-2A	6W*	110(-200)	PA
2SB495	Ge, pnp	12	-25	-6	-1A	200	110(-150)	PA
2SC374	Si, npn	33	30	4	100	200		RF, Conv, Mix, Osc
2SC381	Si, npn	33	30	4	100	200		RF, Conv, Mix, Osc
2SC403	Si, npn	38	50		100	100	60(1)	RF, Conv, Mix, Osc
2SC403A	Si, npn	38	50	5	100	150	20-175(1)	RF, Conv, Mix, Osc
2SC403B	Si, npn	38	50	4	100	250	41-175(1)	RF, Conv, Mix, Osc
2SC403C	Si, npn	38	60	4	100	250	41-175(1)	RF, Conv, Mix, Osc
2SC482	Si, npn	73	40		600	600		RF, PA

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Number	Type	Outline	Vcbo(V)	Vebo(V)	Ic(mA)	Pc(mW)	Hfe Ic(mA)	Application
2SC629	Si, npn	38	18		30	150	30(1)	RF, Conv, Mix, Osc
2SC631	Si, npn	38	25	6	200	180	129-690(1)	LN, RF
2SC632A	Si, npn	38	50, 25**	6	200	100	129-690(1)	RF, PA, Osc, Sw
2SC633	Si, npn	38	25	6	200	180	65-690(1)	RF, Conv, Mix, Osc
2SC633A	Si, npn	38	25	6	200	320	82-690(1)	RF, Conv, Mix, Osc
2SC634	Si, npn	38	50	6	200	240	65-690(1)	RF, Conv, Mix, Osc
2SC634A	Si, npn	38	50	6	200	250	82-690(1)	RF, Conv, Mix, Osc
2SC657	Si, npn	38	13	3	30	150	13-170(4)	RF, Osc, Mix
2SC706	Si, npn	27	15	3	30	120	80(1)	RF, Conv, Mix, Osc
2SC710	Si, npn	138	25	4	100	200	90(10)	RF, Conv, Mix, Osc
2SC756-4	Si, npn	84	40**	6	4A	8W*	17-520(500)	PA, with TC-5E Heat Sink
2SC756-6	Si, npn	84	40-100	6	4A	8W*	90(500)	PA, with TC-5E Heat Sink
2SC756-8	Si, npn	84	120-180	7	4A	8W*	30(3A)	PA, with TC-5E Heat Sink
2SC795	Si, npn	100	250	6	100	9W*	70(10)	PA
2SC805	Si, npn	84	100	5	200	750	100(3)	RF, AF, Sw
2SC806	Si, npn	102	650	10	10A	125W*	30(2A)	PA
2SC806A	Si, npn	102	630	10.5	5A	95W*	12-92(2A)	PA
2SC807A	Si, npn	102	195	8	5A	95W*	30(0.1A)	PA

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Number	Type	Outline	Vcbo(V)	Vebo(V)	Ic(mA)	Pc(mW)	Hfe Ic(mA)	Application
2SC867	Si, npn	100	520	10	1A	18W*	80(100)	PA, Sw
2SC870	Si, npn	#11	25	4	30	200	160(1)	PA, AF, RF, LN
2SC895	Si, npn	100	380	8	2.5A	23.7W*	120(0.1A)	PA, Sw
2SC918	Si, npn	#15	20	3	30	188	20-200(4)	RF
2SC926	Si, npn	38	115	3.5	100	100	50(1)	RF, Sw
2SC926A	Si, npn	38	150	5	30	250	30-276(1)	RF, IF
2SC930	Si, npn	27	15, 10**	5	30	120	15-200(1)	IF (FM)
2SC930C	Si, npn	27	15, 10**	5	30	120	40-80(1)	IF (FM)
2SC931	Si, npn	120	50	4	3A	10W*	70(1A)	PA, AF
2SC931C	Si, npn	120	50	4	3A	10W*	40-80(1A)	PA, AF
2SC932	Si, npn	120	30, 20**	4	3A	10W*	70(1A)	PA, AF
2SC957	Si, npn	#15	30	3	100	250	13-172(1)	IF
2SC1013	Si, npn	132	35, 20**	5	1.5A	7W*	80(0.5A)	PA, AF
2SC1014	Si, npn	132	50, 40**	5	1.5A	7W*	70(0.5A)	PA, AF
2SC1018	Si, npn	132	75, 35**	4	1A	1.1W	50(0.1A)	RF, PA
2SC1034	Si, npn	100	1100	13	2A	23.7W*	4-40(0.75A)	PA
2SC1056	Si, npn	#1	260	5	100	3.6W*	20-320(3)	PA (IF) with TC-5F Heat Sink
2SC1086	Si, npn	#2	1100	14	4A	125W*	12-(2A)	PA, Sw

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Number	Type	Outline	Vcbo(V)	Vebo(V)	Ic(mA)	Pc(mW)	Hfe Ic(mA)	Application
2SC1123	Si, npn	#16	35	3	100	300	20-137(1)	VHF Mix
2SC1124, A	Si, npn	#3	140**	6	1A	4.75W*	51-442(100)	RPA
2SC1126	Si, npn	#4	15**	3	50	250	20-137(1)	VHF Osc
2SC1127	Si, npn	#3	180**	8	100	950	30-138(3)	RPA, IF
2SC1128	Si, npn	#4	35**	3	100	300	20-137(1)	RF, Mix, Osc, Sw, IF
2SC1129	Si, npn	#4	35**	3	30	300	20-200(4)	RF, IF, AGC
2SD24	Si, npn	99	300	2	100	4W*	100(50)	PA
2SD28	Si, npn	100	70		3A	18W*	100(100)	PA
2SD29	Si, npn	100	70		3A	18W*	100(100)	PA
2SD69	Si, npn	102	140		2A	125W*	150(100)	PA
2SD72	Ge, npn	12	25		600	720*	150(200)	PA
2SD82	Si, npn	102	100	10	6A	50W*	60(1A)	PA, Sw
2SD88	Si, npn	102	100	8	5A	80W*	80(2A)	PA
2SD88A	Si, npn	102	300	8	10A	95W*	34-517(2A)	PA
2SD128, A	Ge, npn	12	32		500	250	82(20)	PA
2SD187	Ge, npn	12	25	12	150	200	100(30)	PA, AF
2SD201	Si, npn	102	90	7	6A	50W*	50(3A)	PA, Sw
2SK19Y	Si, npn	102	80	8	5A	23W*	43-370(2A)	PA, AF

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Number	Type	Outline	Vcbo(V)	Vebo(V)	Ic(mA)	Pc(mW)	Hfe Ic(mA)	Application
2SD291	Si, npn	102	70, 40**	10	3A	23W*	100(100)	PA, AF
2SD292	Si, npn	102	70, 55**	10	3A	23W*	100(100)	PA, AF
SE3001	Si, npn	29	30, 12**	2	100	200	30-240(8)	VHF, Osc, RF
SE5020	Si, npn	51	20	3	20	88	32-110(4)	RF, AGC
SE5023	Si, npn	52	20	3	20	88	20-200(4)	IF, AGC
SE5025	Si, npn	31	30	3	100	150	20-100(10)	IF
SPS1351	Si, npn	#5	30	3	100	310	20-200(4)	VHF, RF
SPS1352	Si, npn	#14	30, 20**	3	100	310	20-200(8)	VHF Osc
SPS1353	Si, npn	#5	25, 20**	3	100	310	20-150(4)	VHF Mix

Number	Type	Outline	Vdgo(V)	Vgso(V)	Id(mA)	Pc(mW)	Gmo(mV)	Application
2SK19Y	JFET Si, N Ch.	#8	18		(Ig=10)	200	7(Vds=10V)	VHF, RF
2SK22	JFET Si, N Ch.	#9	13	-10	20	150		RF, Mix, Osc
2SK23	JFET Si, N Ch.	#6	18V	-9V	20	150	4.0 (Vds=10V)	RF, Mix, Osc
2SK35	JFET Si, N Ch.	#6	20	-18	20	200	6.3 - 15.4 (Vds=10V)	LN, AF

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Number	Type	Outline	Vdgo(V)	Vsgo(V)	Ic(mA)	Pc(mW)	Gmo(mV)	Application
2SK42	JFET Si, N Ch.	#10	10 (Vdsr= -10V)		10	50	3.5 - 5.5 (Vds=4V)	RF
2SK43	JFET Si, N Ch.	#7	30	-30V	20	300	6.3 - (Vds=10V)	VHF, LN, RF, IF
CS2004D	Refer to 2SC632A							
CS6168G	Refer to 2SC634A							
CS6229F	Refer to 2SC634A							

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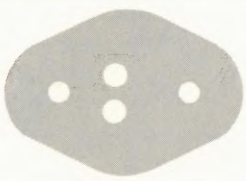
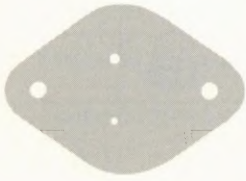
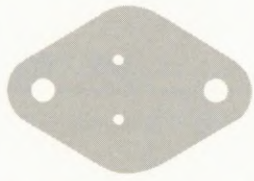
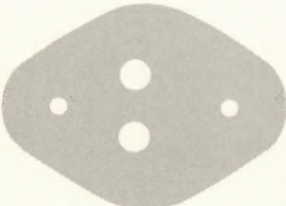

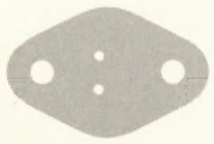
OUTLINES

#1 	#7 	#15 	33 	97
#2 	#8 	#16 	38 	99, 100, 101, 102
#3 	#9 	12, 73 	42, 138 	120
#4 	#10 	13 	48, 51, 52, 57 	132
#5 	#11 	27 	60, 84 	
#6 	#14 	29, 31 	72 	

CODE: (1) E, (2) B, (3) C, (4) Shield
(unless otherwise specified).

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MICA SPACER FOR TRANSISTORS

Part No.	Outline	Transistors	Part No.	Outline	Transistors
2-825-001		2SB378(A)-380(A), 2SC352A, 2SC470, 2SC756, 2SC805, 2SC1056.	2-825-007		2SC1034
2-825-002		2SB407, 2SC806(A), 2SC807(A), 2SC1115, 2SD69, 2SD82, 2SD88(A), 2SD201	2-825-008		2SC41, 2SD45, 2SD46, 2SD47.
2-825-003		Note: -003 is twice the thickness of -002.			
2-825-004		2SC1086, 2SD316.	3-701-422		2SD290, 2SD291, 2SD292
2-825-005		2SC795(A), 2SC867, 2SC895, 2SC1034, 2SD28, 2SD29			
2-825-006		Note: -006 is twice the thickness of -005			

SONY®